Catalogue of American Amphibians and Reptiles.

Beaman, K.R., J.Q. Richmond, and L.L. Grismer. 2004. *Eumeces lagunensis*.

Eumeces lagunensis Van Denburgh
San Lucan Skink

Eumeces skiltonianus: Yarrow 1882:41 (part).
Eumeces lagunensis Van Denburgh 1895:134. Type locality, "San Francisquito, Sierra Laguna, [Baja California Sur, México]." Holotype, California Academy of Sciences (CAS) 400, collected by Gustav Eisen on 28 March 1892 (examined by LLG). See **Remarks**.
Plestiodon lagunensis: Van Denburgh and Slevin 1921:52.
Plestiodon skiltonianus lagunensis: Nelson 1921:114–115.
Eumeces skiltonianus lagunensis: Linsdale 1932:374.

• **CONTENT.** The species is monotypic.

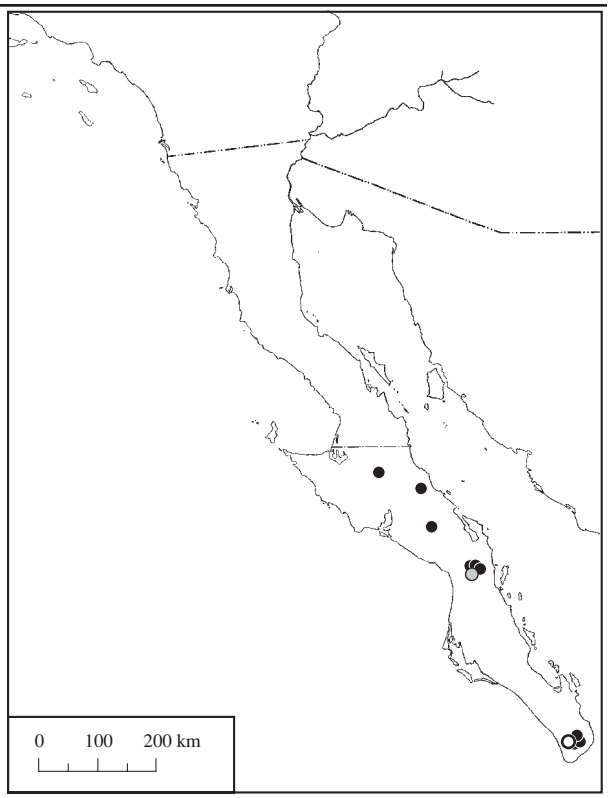
• **DEFINITION.** *Eumeces lagunensis* is a small skink with a maximum total length of 147 mm. The scutellation is as follows: 24 scale rows at midbody; 57–60 dorsal scale rows; 40–46 ventral scale rows; 102 subcaudals; 4 supraoculars (three touching frontal); frontonasal in contact with frontal or not; large interparietal enclosed posteriorly by medial contact of large parietals; 7–8 supralabials; upper secondary temporal in broad contact ventrally with last supralabial; 2 postmentals; 6 infralabials; 2 postlabials (not superimposed); 2–2 nuchals, occasionally 1–1, 1–2, or 3–3, blending posteriorly with wide, cycloid, imbricate, dorsal scales of body and tail; 16 scales around base of tail; and vent bordered by two large scales anteriorly. Granular axillary scales are not prominent and only 0–2 short rows are present and situated posterior to the medial margin of the forelimb insertion. Subdigital lamellae on the fourth toe number 12–14.

Dorsal and lateral ground color is dark olive. Two bluish gray lines run along each side, with the upper originating on the internasal plate, crossing the anterior loreal, prefrontal, supraocular, and parietal plate, and running along the dorsal scales to the tail, and the lower traversing the labial plates, crossing the ear opening, and running along the side of the neck and body to the hind limb, forming the lower boundary of the olive ground color. The lower labials, chin, throat, chest, preanal region, lower limb surfaces, and the proximal half of the tail are dull pinkish buff. The ventral surface and a faint bar across the throat are bluish gray. The tail is salmon or bright flesh colored in juveniles, becoming olive brown in adults.

• **DIAGNOSIS.** *Eumeces lagunensis* may be distinguished from all other congeners by having the last supralabial (either the seventh or eighth scale in the series) at least twice the size of the supralabial scale immediately preceding it, the last supralabial being in broad contact with the upper secondary temporal, making the primary temporal and lower secondary temporal widely separated and no longer in contact, and an interparietal scale enclosed posteriorly by the parietal scales.

• **DESCRIPTIONS.** The original description was published by Van Denburgh (1895). Additional descriptions appeared in Van Denburgh (1922), Taylor (1935), Rodgers and Fitch (1947), Tanner (1957, 1988), and Grismer (1996, 2002).

• **ILLUSTRATIONS.** A line drawing of the adult, dorsal, ventral, and lateral views of the head, a ventral view of the hind



MAP. Range of *Eumeces lagunensis*, the white circle marks the type locality, the gray circle marks the neotype locality, and dots indicate other records.

FIGURE 1. An adult *Eumeces lagunensis* from the Sierra Guadalupe, Baja California Sur, México (photograph by LLG).

FIGURE 2. A juvenile *Eumeces lagunensis* from the Sierra Guadalupe, Baja California Sur, México (photograph by LLG).

limb and vent, and a dorsal view of the front limb appeared in the original description by Van Denburgh (1895). Color photographs of an adult and a juvenile were published by Grismer (1996, 2002). A color photograph of an adult appeared in McPeak (2000).

• **DISTRIBUTION.** *Eumeces lagunensis* has a disjunct distribution in Baja California Sur. It is restricted to the Sierra de La Laguna and associated eastern foothills in the Cape Region, and occurs at four localities to the north: in the Comondú region, at Santa Águeda, at Los Coronados of the northern Sierra Guadalupe, and in the San Francisco de La Sierra. The species also may occur throughout the Sierra la Giganta (Grismer 2002).

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** Murphy (1976, 1982, 1983a,b) and Grismer (1994a,b,c) discussed the **origin and evolution** of *Eumeces lagunensis* in Baja California. **Phylogenetic relationships** were discussed by Taylor (1935), Rodgers and Fitch (1947), Tanner (1957), Lieb (1985), Grismer (1996), Griffith et al. (2000), Richmond (2000), and Richmond and Reeder (2002). Various aspects of its biology are as follows: **conservation** (Ortega Rubio et al. 1989, Galina Tessaro et al. 2002), **diet** (McPeak 2000), **ecology** (Murray 1955, Seib 1980, Galina Tessaro et al. 1995, Grismer 2002, Richmond and Reeder 2002), **evolution** (Savage 1960, Richmond 2000, Richmond and Reeder 2002), **morphology** (Taylor 1935, Grismer 1996, Richmond and Reeder 2002), and **taxonomy** (McLain 1899; Van Denburgh 1922; Loveridge 1930; Linsdale 1932; Taylor 1935; Rodgers and Fitch 1947; Tanner 1957; Grismer 1996, 2002; Richmond 2000; Richmond and Reeder 2002).

The following authors documented the species' occurrence in Baja California: Van Denbrugh and Slevin (1921), Nelson (1922), Zweifel (1958), Leviton and Banta (1964), Zwinger (1983), Alvarez et al. (1988), Grismer (1990, 2002), Flores Villela (1991, 1993), Flores Villela et al. (1995), McPeak (2000), and Galina Tessaro et al. (1995, 2002). Grismer and McGuire (1993) and Grismer (1996) reported on new localities for *E. lagunensis*. Grismer (1996) provided a detailed discussion on the taxonomy and distribution of the species.

Eumeces lagunensis has been included in the following **checklists**: Schmidt (1922), Stejneger and Barbour (1923, 1933, 1939, 1943), Smith and Taylor (1950a), Loomis et al. (1974), and Sanborn and Loomis (1976); **taxonomic keys**: Loveridge (1930), and **bibliographies**: Smith and Smith (1976). Slevin and Leviton (1956) included the holotype in a list of types from the Natural History Museum of Sanford University (now in the holdings of the California Academy of Sciences). Cochran (1961) included the neotype and neoparatypes in a list of types from the U.S. National Museum. Smith and Taylor (1950b) included *E. lagunensis* in a list of type localities for Mexican amphibians and reptiles.

• **REMARKS.** Two specimens (CAS 400 and 402), collected by Gustav Eisen and included in the original description by Van Denburgh (1895), were destroyed in the San Francisco earthquake and fire of 1906. Taylor (1935) designated USNM 67398, collected by W.M. Mann in February 1924 "on the trail between Loreto and Comondú" as a neotype and USNM 67399–403 as neoparatypes. Cochran (1961) stated that the designation of the neotype may be invalid since the designated specimen is not from the original type locality.

• **ETYMOLOGY.** The name *lagunensis* is in reference to the type locality in the Sierra de La Laguna, Baja California Sur, México.

• **COMMENT.** The status of *E. lagunensis* as a distinct species has been controversial since the original description by Van Denburgh (1895), and some authors have considered it to be a subspecies of *Eumeces skiltonianus*. However, several studies have shown that the distinctiveness of certain scale characters warrants the recognition of *E. lagunensis* as a separate species (e.g., Taylor 1935, Rodgers and Fitch 1947, Grismer 1996). Recent phylogenetic analyses by Richmond and Reeder (2002) using mitochondrial DNA data showed that *E. lagunensis* haplotypes are monophyletic and form the sister group to a clade that consists of *Eumeces skiltonianus* populations from southern California and the Great Basin. The close phylogenetic relatedness and morphological similarity between *E. lagunensis* and *E. skiltonianus* populations in southern California suggests that *E. lagunensis* is a derivative of a more northern, *E. skiltonianus*-like ancestor that dispersed southward into Baja California, then subsequently evolved in allopatry in the southern portion of the peninsula. The exclusivity of mitochondrial haplotypes combined with morphological diagnosability provides strong support for recognizing *E. lagunensis* as a valid evolutionary species.

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